JUN 11 2004
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FIG. 1

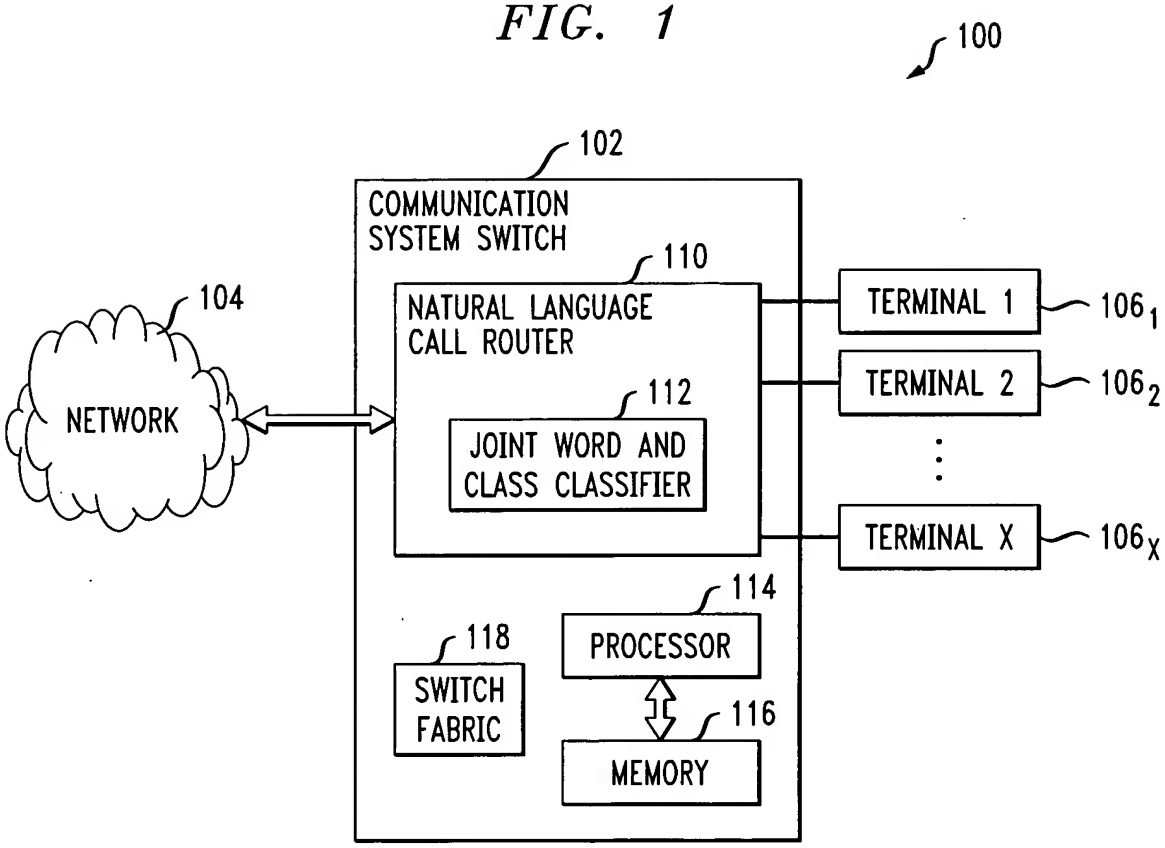


FIG. 2

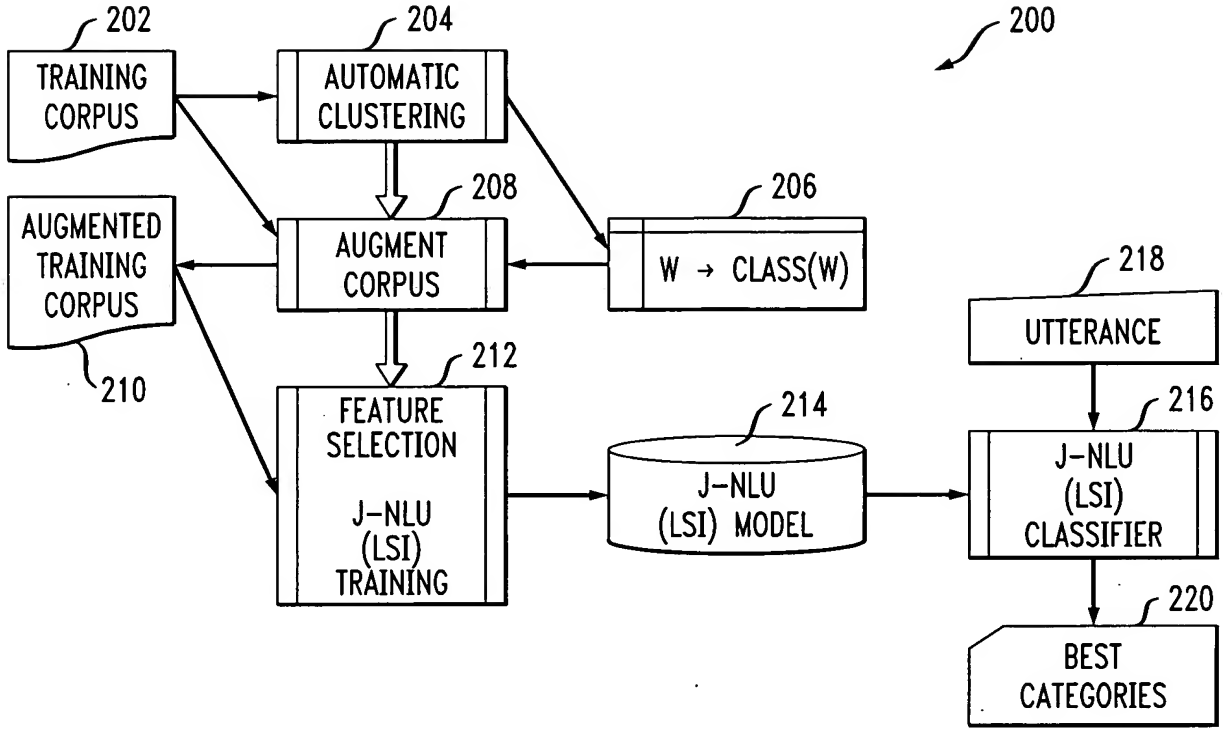


FIG. 3

```
Set up initial word class mapping
    Compute the mapping perplexity on the training corpus
        Do until some stopping criterion is met
            Do for each word w in vocabulary W
                Remove w from class g_w
                    Do for all existing classes g:
                        Compute perplexity as if w were moved to g
                    end-do-loop
                Assign w to the class with the lowest perplexity
            end-do-loop
        end-do-loop
Exit
```

FIG. 4

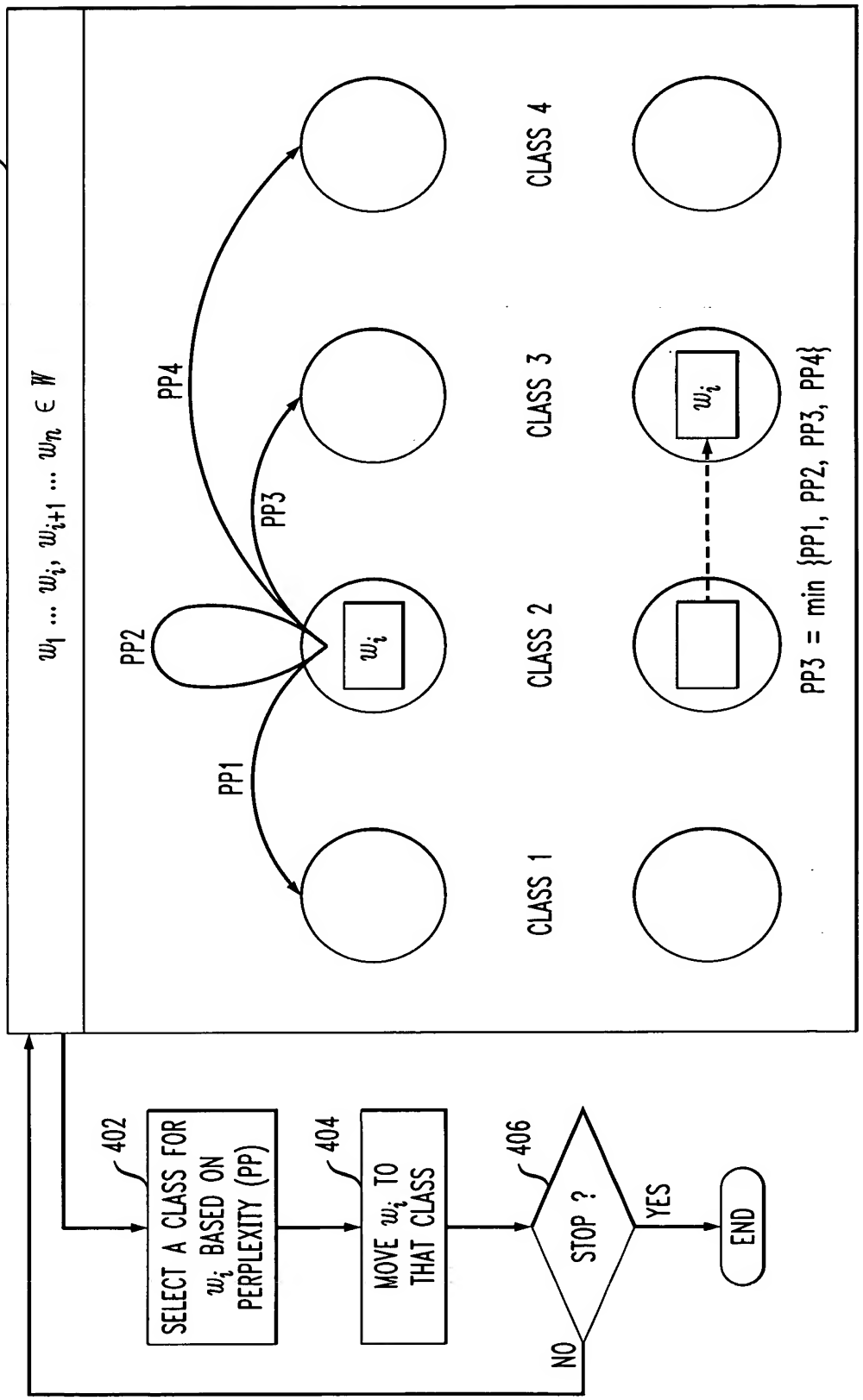

400
$w_1 \ldots w_i, w_{i+1} \ldots w_n \in W$
PP1
PP2
PP3
PP4
w_i
CLASS 1
CLASS 2
CLASS 3
CLASS 4
PP3 = min {PP1, PP2, PP3, PP4}
402
SELECT A CLASS FOR w_i BASED ON PERPLEXITY (PP)
404
MOVE w_i TO THAT CLASS
406
STOP ?
NO
YES
END

FIG. 5

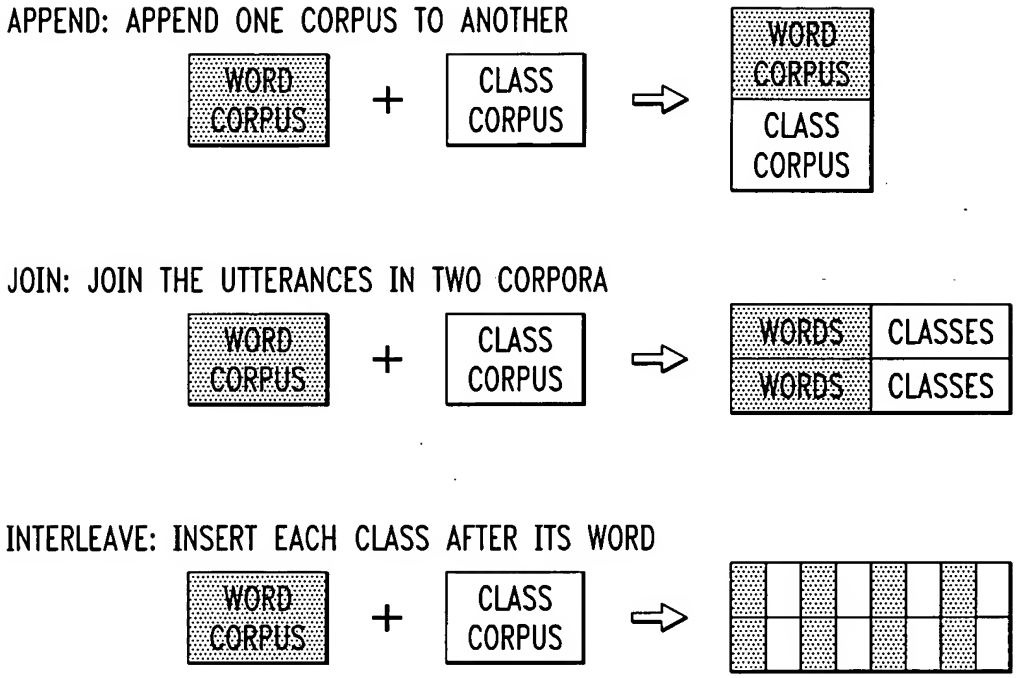
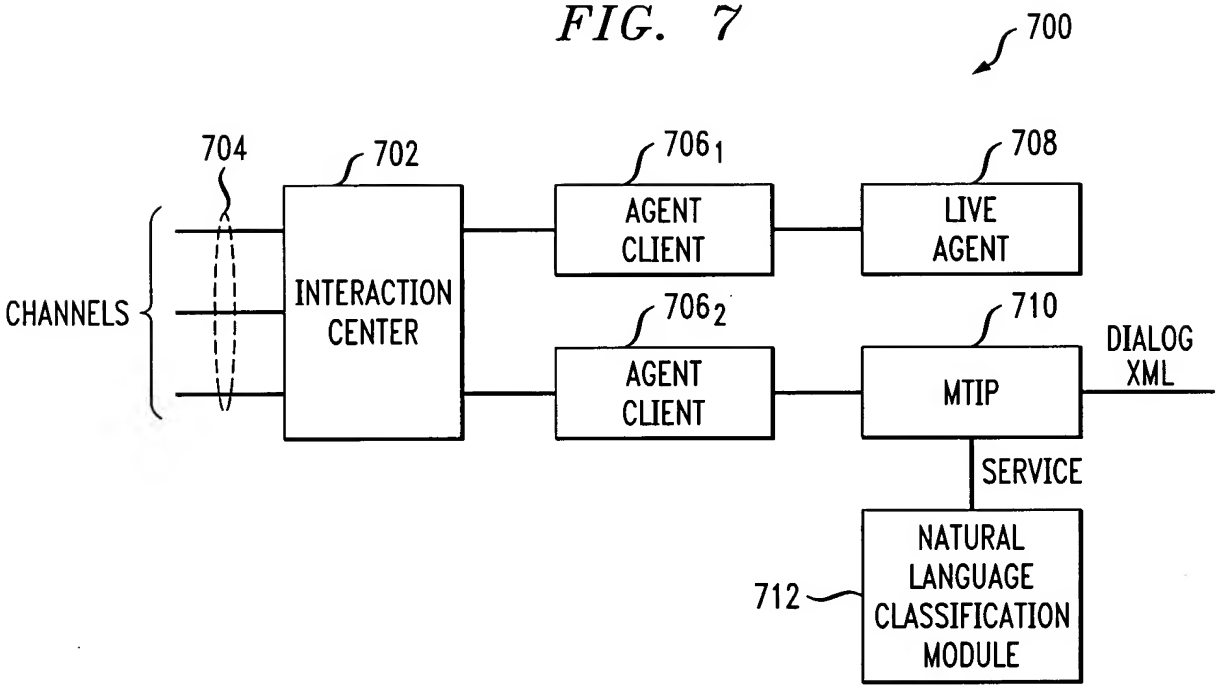


FIG. 6

GIVEN A PARAMETER p:

1. CALCULATE THE IG VALUE OF EACH TERM
2. SORT THE TERMS BY THEIR IG VALUES INTO DESCENDING ORDER
3. SET THE THRESHOLD t TO THE IG VALUE AT TOP p PERCENTILE OF SORTED TERMS
4. SELECT TERMS WITH IG VALUE $\geq t$

FIG. 7


700
704
702
706 1
708
AGENT CLIENT
LIVE AGENT
CHANNELS
INTERACTION CENTER
706 2
710
DIALOG XML
AGENT CLIENT
MTIP
SERVICE
NATURAL LANGUAGE CLASSIFICATION MODULE
712